

AMENDMENTS TO THE CLAIMS:

This listing of claims replaces all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) An electrode comprising: having  
[[ - ]] a two dimensionally shaped, electrically conductive a current collector (1),  
which that is two-dimensional in shape and that contains perforations; (5),  
—a first electrode layer (15), which is arranged on a main surface of the current  
collector and in its perforations, so as to be form fitting with and firmly bonded to the  
current collector, [[ - ]] an electrically conductive, corrosion resistant intermediate layer that  
is electrically conductive and substantially corrosion-resistant (10), which is form fittingly  
arranged the intermediate layer being on at least part of a first surface of between the  
current collector and the electrode layer, wherein the intermediate layer comprises  
materials that are selected from: comprising at least one of a [[ - ]] precious metal metals,  
graphitic carbon, a metal nitride nitrides and a metal carbides carbide; and  
a first electrode layer that is on the intermediate layer, at least part of the first  
electrode layer being in at least some perforations of the current collector; the first  
electrode layer, the intermediate layer and the current collector being bonded together.
2. (Currently Amended) The electrode of claim 1 according to the preceding  
claim, further comprising:

[[ -]] ~~wherein a second electrode layer is arranged on the other main~~ adjacent to a second surface of the current collector.

3. (Currently Amended) The electrode of claim 2 ~~according to the preceding claim, [[ -]] wherein the first and second electrode layers layer are made of the~~ comprise a same material.

4. (Currently Amended) The electrode of claim 1 ~~according to one of the preceding claims, [[ -]] wherein the intermediate layer is~~ substantially continuous continuously arranged on the current collector.

5. (Currently Amended) The electrode of claim 1 ~~according to one of the preceding claims, [[ -]] wherein the current collector comprises an elongated aluminum foil provided with perforations.~~

6. (Currently Amended) The electrode of claim 1 ~~according to one of Claims 1 to [[4]], [[ -]] wherein the current collector comprises a net of metal wires.~~

7. (Currently Amended) The electrode of claim 1 ~~according to one of Claims 1 to 4, [[ -]] wherein the current collector comprises an etched foam metal.~~

8. (Currently Amended) The electrode of claim 1 ~~according to one of the preceding claims, [[-]]~~ wherein the first ~~and/or second~~ electrode layer comprises a conductive polymer ~~polymers~~.

9. (Currently Amended) The electrode according to of claim 1 ~~one of Claims 1 to 7, wherein [[-]] having a the first and/or second~~ electrode layer, ~~which~~ comprises activated carbon.

10. (Currently Amended) The electrode of claim 1 ~~according to one of Claims 1 to 7, [[-]]~~ wherein the first ~~and/or second~~ electrode layer comprises a metal oxide ~~oxides~~.

11. (Currently Amended) A method for the production of producing an electrode, comprising ~~the process steps:~~

~~A) a two dimensionally shaped current collector (1), which contains perforations (5), is produced,~~

~~B1) an electrically conductive, corrosion resistant~~ producing an intermediate layer on a first surface of a current collector, the intermediate layer being electrically conductive and corrosion resistant, the current collector being two-dimensional in shape and having perforations, the intermediate layer comprising at least one of (10), which comprises materials that are selected from among: [[-]] a precious metal ~~metals~~, graphitic carbon, a metal nitride, nitrides and a metal carbide; and carbides, ~~is then produced on the current collector,~~

~~B) after which~~ producing an electrode layer (15) is produced on at least one main surface of the current collector, over on the intermediate layer;[[,]] in such a way that it is form fittingly and firmly the electrode layer, the intermediate layer, and bonded to the current collector being bonded together.

12. (Currently Amended) The method of claim 11 according to the preceding claim, [[-]] wherein, in process step B), further comprising producing a second the electrode layer is produced on both main surfaces of adjacent to a second surface of the current collector.

13. (Currently Amended) The method of claim 11 according to one of Claims 11 or 12, [[-]] wherein, in process step A), the current collector is produced further comprising:

forming the perforations by punching perforations in a metal foil; and  
~~stretch forming this~~ stretching the metal foil to produce the current collector.

14. (Currently Amended) The method of claim 13 according to the preceding claim, [[-]] wherein an aluminum foil is used as the metal foil comprises aluminum; and  
[[,]]

[[ -]] wherein, in process step A1), the method further comprises removing surface layers of the metal foil are removed prior to process steps B1) and/or B) prior to producing the intermediate layer in order to improve the a conductivity of the metal foil.

15. (Currently Amended) The method of claim 11, further comprising: according to one of Claims 11 or 12, [[-]] wherein, in process step A), producing the current collector is produced by weaving metal wires into a metal net.

16. (Currently Amended) The method of claim 11 according to one of Claims 11 to 15, [[-]] wherein, in process step B1), the electrically conductive intermediate layer, in the form of comprises a metal layer[[,]] that is produced by means of a galvanic process, or by means of a CVD process, or a PVD process.

17. (Currently Amended) The method of claim 11 according to one of Claims 11 to 15, [[-]] wherein, in process step B1), a carbon layer, as an electrically conductive the intermediate layer[[,]] comprises a carbon layer that is produced by means of dip coating of the current collector (1) in a carbon bath.

18. (Currently Amended) The method of claim 11 according to one of Claims 11 to 17, [[-]] wherein, in process step B), the electrode layer is produced by blade coating of a liquid phase containing an electrode material or a viscous phase[[,]] which contains containing the electrode material (25).

19. (Currently Amended) The method of claim 18 according to one of Claims 11 to 17, [[-]] wherein, in process step B), blade coating comprises:

applying the liquid phase or the viscous phase, which contains the electrode material (25), is first applied to a carrier foil; (30) and  
drying the liquid phase or the viscous phase leaving the electrode material dried;  
and[[,]]

[[ -]] wherein, subsequently, transferring the electrode material (25) is transferred from the carrier foil (30) to the current collector containing the intermediate layer (1), so that the electrode layer is formed over the intermediate layer.

20. (Currently Amended) The method according to of claim 19 the preceding claim, [[ -]] wherein further comprising mixing the electrode material is mixed with a binder prior to applying the liquid phase or the viscous phase and applied to the carrier foil[[,]]

[[ -]] wherein the electrode material is transferred from the carrier foil to the current collector by melting the binder.

21. (Currently Amended) The method of claim 18 according to one of Claims 11 to 20, [[ -]] wherein the electrode material comprises at least one of activated carbon, a metal oxide oxides, or a conductive polymer polymers are used as electrode material.

22. (Currently Amended) An electrochemical double-layer capacitor, comprising: plural electrodes, at least one of the plural electrodes comprising:

a current collector that is two-dimensional in shape and that  
contains perforations;  
an intermediate layer that is electrically conductive and  
substantially corrosion-resistant, the intermediate layer being on at least  
part of a first surface of the current collector, the intermediate layer  
comprising at least one of precious metal, graphitic carbon, a metal nitride,  
and a metal carbide; and

a first electrode layer that is on the intermediate layer, at least part  
of the first electrode layer being in at least some perforations of the current  
collector; the first electrode layer, the intermediate layer and the current  
collector being bonded together, the first electrode layer comprising at least  
one of [[-]] having electrodes according to one of Claims 1 to 7 or 9, which  
comprise activated carbon and[[/or]] graphitic carbon; and[[,]]

[[ -]] wherein a porous separator is arranged between at least two of the plural  
electrodes;[[,]]

[[ -]] wherein at least one of the plural electrodes and the porous separator contain  
are impregnated with an electrolyte.

23. (Currently Amended) A hybrid capacitor, comprising:

a first electrode;

a second electrode; and

~~[[ - ]] having a first and a second electrode according to one of Claims 1 to 10,~~  
~~wherein the first electrode comprises active carbon and/or graphitic carbon and the second~~  
~~electrode comprises electrically conductive polymers and/or metal oxides, [[ - ]] wherein a~~  
~~porous separator is arranged between the first electrode and the second electrode; [[ , ]]~~

~~[[ - ]] wherein the first and second electrodes and the porous separator are~~  
~~impregnated with contain an electrolyte;~~

wherein the first electrode comprises:

a first current collector that is two-dimensional in shape and that  
contains perforations;

a first intermediate layer that is electrically conductive and  
substantially corrosion-resistant, the first intermediate layer being on at  
least part of a first surface of the first current collector, the first  
intermediate layer comprising at least one of precious metal, graphitic  
carbon, a metal nitride and a metal carbide; and

a first electrode layer that is on the first intermediate layer, at least  
part of the first electrode layer being in at least some perforations of the  
first current collector; the first electrode layer, the first intermediate layer  
and the first current collector being bonded together, the first electrode  
layer comprising at least one of active carbon and graphitic carbon; and

wherein the second electrode comprises:

a second current collector that is two-dimensional in shape and that  
contains perforations;



a second intermediate layer that is electrically conductive and substantially corrosion-resistant, the second intermediate layer being on at least part of a second surface of the second current collector, the second intermediate layer comprising at least one of precious metal, graphitic carbon, a metal nitride, and a metal carbide; and

a second electrode layer that is on the second intermediate layer, at least part of the second electrode layer being in at least some perforations of the second current collector; the second electrode layer, the second intermediate layer and the second current collector being bonded together, the second electrode layer comprising at least one of an electrically conductive polymer and a metal oxide.

24. (Currently Amended) A pseudo-capacitor, comprising:  
plural electrodes, at least one of the plural electrodes comprising:

a current collector that is two-dimensional in shape and that contains perforations;

an intermediate layer that is electrically conductive and substantially corrosion-resistant, the intermediate layer being on at least part of a first surface of the current collector, the intermediate layer comprising at least one of precious metal, graphitic carbon, a metal nitride, and a metal carbide; and

a first electrode layer that is on the intermediate layer, at least part of the first electrode layer being in at least some perforations of the current collector; the first electrode layer, the intermediate layer and the current collector being bonded together, the first electrode layer comprising either a metal oxide or a conductive polymer; and

~~[[ - ]] having a first and a second electrode according to one of Claims 1 to 10, wherein both electrodes comprise either metal oxides or conductive polymers,~~

~~[[ - ]] wherein a porous separator is arranged between at least two of the plural electrodes; the first and second electrode,~~

~~[[ - ]] wherein at least one of the plural electrodes and the separator are impregnated with contain an electrolyte.~~